

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS—MILTON WHITNEY, Chief.

SOIL SURVEY OF HAMPTON COUNTY, SOUTH CAROLINA.

BY

M. W. BECK, IN CHARGE, AND A. L. GOODMAN.

W. EDWARD HEARN, INSPECTOR, SOUTHERN DIVISION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1915.]



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1917

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
Washington, D. C., April 20, 1916.

SIR: In the extension of the soil survey in the State of South Carolina work was undertaken in Hampton County and completed during the field season of 1915.

I have the honor to transmit herewith the manuscript and map covering this work and to recommend their publication as advance sheets of Field Operations of the Bureau of Soils for 1915, as authorized by law.

Respectfully,

MILTON WHITNEY,
Chief of Bureau.

Hon. D. F. HOUSTON,
Secretary of Agriculture.

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FIGURE.

FIG. 1. Sketch map showing location of the Hampton County area, South Carolina.....

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MAP.

Soil map, Hampton County sheet, South Carolina.

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SOIL SURVEY OF HAMPTON COUNTY, SOUTH CAROLINA.

By M. W. BECK, In Charge, and A. L. GOODMAN.—Area inspected by
W. EDWARD HEARN.

DESCRIPTION OF THE AREA.

Hampton County lies in the southern part of South Carolina, adjoining the southwestern boundary of the State. It is about 35 miles west of the Atlantic coast and approximately 40 miles north of Savannah, Ga. The county is bounded on the northwest by Barnwell County; on the northeast by the Big Salkehatchie River, which separates it from Colleton County; on the southeast by Beaufort and Jasper Counties; and on the southwest by the Savannah River, which separates it from the State of Georgia. It has an area of 613 square miles, or 392,320 acres.

Hampton County lies wholly within the Coastal Plain province, and the greater part of it is within the section commonly known as the "flat piny-woods region." The topography of the northwestern part of the county, or the section west of the Seaboard Air Line Railway and north of Scotia, varies from undulating to rolling. Practically all the county to the east and south of this division has uniformly level to gently rolling surface features. Along the Savannah, Big Salkehatchie, and Coosawhatchie Rivers there are extensive low, flat first-bottom areas, and in places along the Savannah River there are broad second bottoms or terraces separated from the first bottoms, and also from the uplands, by well-defined bluffs.

The county has an average elevation of about 100 feet above sea level, the southeastern part, in the vicinity of Yemassee, being the lowest, and the extreme northwestern part, in the vicinity of Ruddell, the highest. There are a few ridges and knolls in the northwestern corner of the county which have a considerable elevation above the surrounding country. The elevation above sea level at Brunson is about 133 feet; at Varnville, 101 feet; Early Branch, 73 feet; Gifford, 138 feet; Estill, 110 feet; and Scotia, 96 feet. The general slope of the country is southeastward.

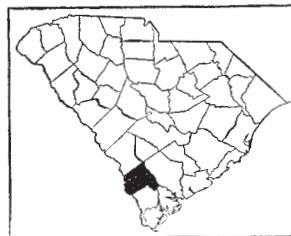


FIG. 1.—Sketch map showing location of the Hampton County area, South Carolina.

The county is drained by three systems—the Coosawhatchie River, the Big Salkehatchie River, and the Savannah River.

The greater part of the county is drained by the Coosawhatchie River and its tributaries. This stream flows in a southeasterly direction, nearly through the center of the county. The channel varies from 50 to 150 feet in width and is very shallow. The river has very little fall, and is consequently rather sluggish, and does not deepen or widen its channel very rapidly. The Savannah River, which forms the southwestern boundary, drains a strip of the county ranging from 4 to 8 miles wide. The main channel has an average width of about 250 feet. The Big Salkehatchie River, which flows in a southeasterly direction along the northeastern boundary of the county, drains a belt ranging from 2 to 8 miles in width. The channel of this stream ranges from 50 to 200 feet in width, and is very shallow. The river has very little fall and, being affected by the tide at Yemassee, is more or less sluggish.

The regional drainage of the county is not well developed. There are a large number of depressed areas or cypress ponds ranging from a fraction of an acre to 2,000 acres in size; in many instances these depressions have no natural outlet, and in others where there is an outlet the drainage is insufficient, owing to the lack of fall. East of Camp Branch and between Scotia and Garnett there are large areas of flat land which have practically no drainage. The southern and eastern parts of the county are poorly drained, while the northwestern and northeastern sections are well drained, with the exception of the cypress ponds.

All the rivers and creeks in the county have valleys ranging from 100 feet to 1 mile wide and from a few feet to 50 feet deep. The channels, excepting that of the Savannah River, are shallow, and the first bottoms are poorly drained, remaining wet throughout the year. The flat terraces along the Savannah River are poorly drained.

The present boundaries of Hampton County were established in 1912, upon the formation of Jasper County, the county being reduced from 6 to 4 townships, approximately two-fifths of its original area being made a part of Jasper County. The 1910 census, taken before the area of the county was reduced, reports its total population as 25,126, all of which is classed as rural. This gives an average of 26.2 persons per square mile. The white population consists principally of descendants of the early settlers, who were mainly Welsh, Irish, and German. Almost two-thirds of the population is colored. The northern part of the county is the more thickly settled. Farming and lumbering constitute the principal industries.

Hampton, the county seat, has a population of 748, according to the census of 1910, and Brunson, the next largest town, a population

of 610. The population of Varnville is given as 542, and that of Estill as 460. In the last few years Estill has made rapid growth.

Three railroads traverse Hampton County and afford excellent shipping facilities, especially for truck. The main line of the Seaboard Air Line Railway crosses the western part of the county, passing through Garnett, Scotia, Estill, Luray, and Gifford. The main line of the Southern Railway, crossing the Seaboard Air Line 2 miles north of Estill, also extends through the western part of the county, with stations at Furman, Lena, and Valentine. The Charleston & Western Carolina Railway traverses the eastern part of the county and furnishes transportation to Augusta and Charleston. This line passes through Varnville, Hampton, Brunson, and several smaller towns. In addition to these railroads, the main line of the Atlantic Coast Line Railroad follows the southeastern boundary of the county and connects with the Charleston & Western Carolina at Yemassee. The Hampton & Branchville Railroad crosses the Charleston and Western Carolina one-half mile north of Hampton and passes through Crocketville and Miley. Only a very small part of the county is more than 12 miles from a railroad.

The public roads of the county are in poor condition. In wet weather travel is very difficult and in dry weather the sand is so deep that on many of the roads automobile travel is almost impossible. The roads receive some attention, though no surfacing material is added. Good sand-clay roads could easily be constructed, as clay can be obtained at a depth of about 24 inches along practically all the roads. The best roads in the county are those in the vicinity and to the west of Garnett. Only the larger streams are bridged.

There is on an average one public school to each 12 square miles. There are a large number of churches well distributed through the county. The rural delivery of mail extends over most of the county. Artesian water can be obtained in almost any part of the county at depths of 150 to 1,200 feet.

The farm products, with the exception of cotton, are mainly shipped to northern markets, including New York, Philadelphia, and Pittsburgh, a very small quantity being sold locally. Cotton is shipped from Hampton, Estill, Brunson, Varnville, and other towns to Savannah, Columbia, and Augusta.

CLIMATE.

The climate of Hampton County is characterized by mild winters and long, warm summers. The mean annual temperature is about 65° F. The mean temperature for the winter months of December, January, and February is about 48° F., according to the records of the Weather Bureau station at Yemassee. The lowest temperature

recorded during the period of 13 years is 4° F. Periods of comparatively cold weather during the winter are frequent, but of short duration. The temperature seldom drops below freezing, and snowfall is rare. This county is only about 60 miles from the coast, and the winter temperature is greatly modified by winds from the ocean. The humidity, however, is generally high, and this makes the cold periods more disagreeable.

The summers are warm, but the heat is tempered by sea breezes. The mean temperature for the months of June, July, and August is about 80° F. The maximum temperature recorded is 104° F. For the spring and fall months the temperature averages about 65°.

The average date of the first killing frost in the fall is November 11 and that of the last in the spring March 25. This gives a normal growing season of 231 days, which is sufficiently long for the maturing of a wide variety of crops. The early springs enable the farmers to place truck crops on the market only two weeks later than those from the immediate coast.

The mean annual precipitation is about 49 inches. The total rainfall for the wettest year recorded in a period of 13 years was 62 inches, and that for the driest year 38 inches. The rainfall is well distributed; it is heaviest during the summer and lightest during the fall months.

The data in the following table, giving the normal monthly, seasonal, and annual temperature and precipitation, are compiled from the records of the Weather Bureau station at Yemassee, in the southeastern part of Hampton County. The records cover a period of 13 years.

Normal monthly, seasonal, and annual temperature and precipitation at Yemassee.

Month.	Temperature.			Precipitation.		
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.
December.....	47.8	77	16	3.62	1.49	2.26
January.....	47.5	78	14	2.72	2.86	3.78
February.....	48.1	81	4	4.06	2.58	3.14
Winter.....	47.8	81	4	10.40	6.93	9.18
March.....	59.3	92	21	3.35	2.27	4.97
April.....	63.0	93	28	2.95	3.45	1.90
May.....	73.4	102	40	3.70	3.56	4.50
Spring.....	65.2	102	21	10.00	9.28	11.37

Normal monthly, seasonal, and annual temperature and precipitation at Yemassee—Continued.

Month.	Temperature.			Precipitation.		
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.
June.....	° F. 79.1	° F. 104	° F. 53	Inches. 6.10	Inches. 9.34	Inches. 10.86
July.....	81.6	104	59	6.60	4.64	5.68
August.....	80.5	104	55	6.94	5.11	10.58
Summer.....	80.4	104	53	19.64	19.09	27.12
September.....	75.8	101	43	4.11	1.36	9.43
October.....	64.6	90	34	2.71	.89	2.19
November.....	55.9	84	19	2.06	.83	2.91
Fall.....	65.4	101	19	8.88	3.08	14.53
Year.....	64.6	104	4	48.92	38.38	62.20

AGRICULTURE.

This region originally was forested with a heavy growth of longleaf pine and several varieties of oak; the depressed areas were covered with cypress, and the swamps with gum and water oak. The early settlers depended for a livelihood largely on turpentining. Cotton, wheat, oats, rye, corn, sweet potatoes, and rice were grown, but merely for home use. Turpentining was an important industry until 1870, when, with the completion of the Charleston & Western Carolina Railway from Charleston to Augusta, it was largely displaced by lumbering. Since the first settlement of Hampton County agriculture has developed gradually, but it did not become important until after the lumbering industry became established.

The 1880 census reports the average size of the farms as 223 acres and 22 per cent of the farm land as improved; the 1910 census reports the average size of the farms as about 121 acres¹ and 40 per cent of the land in farms as improved. Of the total area of the county 65 per cent is reported in farms.²

Of the various crops grown corn has always had the largest acreage, although cotton has been the principal money crop. The census of 1880 reports 30,825 acres in corn and 21,624 acres in cotton. Oats were grown on 5,325 acres and rice on a total of 3,083 acres. Sweet potatoes occupied 827 acres and sugar cane 409 acres. Rye and wheat were grown to a small extent. Orchard and market-garden crops for the year were valued at about \$2,000.

¹ Each tenancy, and not holding, is classed as a farm.

² The latest available census data are those of the 1910 census, and since the size of Hampton County was materially reduced in 1912 the census figures given in this report are of value only in giving a general idea of the agriculture of the region.

The 1890 census reports 37,838 acres in corn, as compared with 31,074 acres in cotton. About 13,000 acres were in sugar cane, 1,000 acres in sweet potatoes, and nearly 3,000 acres in rice. The area in oats amounted to 7,508 acres. The 1900 census reports corn on 50,483 acres and cotton on 28,830 acres. The total area in rice was 5,130 acres, while that in oats was 6,000 acres. Sugar cane was grown on only 828 acres and sweet potatoes on about the same acreage as in 1889. A wider variety of crops was grown, including hay and forage crops on about 2,200 acres, peas on nearly 5,000 acres, and peanuts on about 600 acres. The value of animals sold and slaughtered in 1899 is reported as \$79,000 and of poultry products about \$34,000. The value of orchard products is given as \$4,539.

The agriculture of Hampton County at present consists of the production of cotton as the money crop and of the general farm crops, mainly corn. Some cattle and hogs are raised, and trucking and orcharding are of some importance.

The 1910 census reports 41,456 acres in cotton and 47,975 acres in corn. Cowpeas rank next to corn in importance. The census of 1910 reports 8,874 acres in this legume, which is the most important forage crop grown in the county. Oats are grown by practically all the farmers and are increasing in importance. In 1909 a total of 6,646 acres were devoted to oats.

Sweet potatoes are reported on nearly 1,000 acres. Other vegetables are reported on about 1,500 acres. Practically all the farms have small gardens and orchards, and small patches of sugar cane. A number of farmers grow peanuts, pasturing the crop with hogs after the vines are cut for hay. The acreage in rice is decreasing rapidly, as the wet areas are being drained and used for more profitable crops. Beans and watermelons receive considerable attention as commercial truck crops and a rather large and increasing acreage is devoted to each, with satisfactory yields.

According to the 1910 census, grains were cut green from 3,413 acres in 1909, and tame or cultivated grasses were grown on 550 acres.

There are several commercial pecan groves in the county. The 1910 census reports a total of 1,038 trees. Many of the trees have not reached their full bearing stage. There are also a large number of mulberry trees, and the census reports about 5,000 peach and 2,000 apple trees. Some pears and grapes are grown. Apples and pears do not do well, on account of blight, but the peach does very well, producing a good quality and quantity of fruit. Some wild plums, dewberries, and blackberries are gathered, and strawberries are grown for home use and local markets.

The corn crop is used on the farm, mainly for feeding work stock, cattle, and hogs. Not enough corn is grown to supply the farm

needs. The greater part of the cowpea crop is used for hay, while a small part is used as a cover crop and plowed under for green manuring. All the oats produced are used at home, being fed in the sheaf on the farm. Sweet potatoes are grown almost exclusively for home use, but a surplus finds its way to local markets.

Cattle raising and dairying are not important. Some farmers give considerable attention to the introduction of purebred cattle. The Angus, Polled Durham, and Hereford are the most popular breeds. A number of grade Jerseys are kept to furnish the home supply of milk and butter. A small number of cattle are imported and fed during the winter and shipped to northern markets in the spring. The number of cattle sold and slaughtered has greatly increased in the last few years.

The census reports 11,083 hogs sold or slaughtered in 1909. The hogs raised are well distributed over the county. Until recently the hogs have been mainly scrub stock, but the grade is being improved and the introduction of animals of Berkshire blood is receiving considerable attention. There is not enough pork produced in the county to supply the local demand. Poultry is kept for home use only.

Very little attention is given to the adaptation of the various soils to certain crops. The farmers, however, recognize that the Hyde silty clay is better suited to rice than to any other crop, and that the loamy sands are best for early truck crops.

The buildings on the average farm include a frame house and a shed or small barn for the work stock. As a rule, where the farm is operated by the owner the house is large and substantial, and occasionally there is a large barn, though in general the barns are inadequate for storing the grain, hay, and cotton produced on the farm. The work stock consists of mules of medium weight. The animals other than work stock receive very little protection during the winter. The farm implements in general use are 1-mule or 2-mule plows, 1-mule walking cultivators or 2-mule riding cultivators, disk harrows or spike-tooth harrows, planters, and some binders, rakes, and mowers. Practically no manure spreaders are used.

The same general method is employed in this county in the cultivation of cotton as in other cotton-growing sections. The best results with corn are obtained by what is known as the Williamson method.¹ The land is plowed 10 to 15 inches deep, in the fall, preferably, and in the spring it is well harrowed and bedded. The corn is planted in the bottom of the furrow, about March 15, and is not plowed until May 1. It receives only two more plowings before it is laid by. At

¹ See Bul. 124, S. C. Expt. Sta.

each cultivation the soil is worked toward the corn, and when the crop is "laid by" the land is practically level and the first roots are 12 to 24 inches under the ground. Under the method practiced until very recently, oats were broadcasted in the fall on unbroken land and plowed under. At present the better farmers flatbreak the land and drill the oats in with fertilizer. Cowpeas are generally seeded between the corn rows at the time of the last cultivation; peanuts are often planted in the same way. The rotation of crops has received but little attention in this county, the general practice being to plant cotton and corn year after year on the same land. At present the value of crop rotation is more appreciated, and rotations are practiced by a number of farmers. The most common consists of cotton, oats, cowpeas, and corn, each one year. As a rule, cowpeas or peanuts are grown with the corn. This rotation enables the farmer to harvest his oat crop and sow cowpeas, which are very beneficial to the soil, adding nitrogen and organic matter.

Commercial fertilizers were introduced about 1870, prior to which time compost and barnyard manure were used quite extensively. The quantity of fertilizer used is increasing rapidly. The census of 1900 reports an expenditure of \$61,290 for fertilizer, as compared with the expenditure of \$258,702 in 1909. Fertilizers of various formulas are used, the most common mixture including 8 per cent phosphoric acid, 4 per cent nitrogen, and 4 per cent potash. Beans and potatoes are given the heaviest applications of fertilizer, both receiving 300 to 1,500 pounds per acre of an 8-5-5 mixture. The crop following either of these is not fertilized. Formerly all the fertilizer was applied at the time of seeding. At present cotton receives 200 to 500 pounds per acre of an 8-4-4 fertilizer at the time of seeding, and in the latter part of June 100 to 200 pounds of nitrate of soda. Corn and melons receive about the same fertilization as cotton. A light application is given oats at the time of seeding, and about March 15, 100 to 200 pounds of nitrate of soda per acre is applied. The value of barnyard manure is recognized, but little is available. Manure, cotton seed, and cottonseed meal are generally used in conjunction with chemical fertilizers.

Farm labor is scarce, and during the harvest season the demand is greater than the supply. The labor is mainly colored. During the cultivating period farm laborers are paid 50 to 75 cents a day with board or \$1 to \$1.50 a day without board. Cotton is picked at 25 to 50 cents per hundred pounds of seed cotton. As a rule, where a house is furnished, farm laborers can be obtained for \$15 to \$25 a month.

The census of 1910 reports 51 per cent of the farms of the county operated by the owners. There are several unusually large estates, ranging in size from 800 to 15,000 acres. The large holdings are

used mainly as game preserves, and most of them adjoin the Savannah River. Some parts of these large tracts are farmed.

Rents vary widely in this county. The most common rent is 100 pounds of seed cotton or its equivalent in cash per acre. The land is rented mainly on the cash basis. Where rented under the share system, the owner furnishes the stock, implements, and fertilizer and receives one-half the crop. The better grades of land rent for \$3 to \$7 an acre and the poorer land for about \$1.50 an acre. The selling price of land varies from \$1.50 to \$60 an acre. The best land is valued at \$25 to \$60 an acre. The 1910 census reports the average assessed value of farm lands as \$9.85 an acre.

SOILS.

The section of Hampton County southwest of Scotia and all east of the Seaboard Air Line Railway is within what is generally known as the flat piny-woods region of the Coastal Plain, and the remainder or northwestern part of the county is in the gently rolling portion of the Coastal Plain. Fine-textured soils predominate throughout the flatwood region, while sandy loams and coarse-textured types predominate in the northwestern section.

All the upland soils of the county are derived from sedimentary deposits consisting of materials washed from land areas farther west and laid down when the area surveyed was submerged in the ocean. Since its elevation the material has undergone various changes, brought about by different agencies, including stream action, oxidation, aeration, drainage, and the growth of vegetation. In the depressed areas, which have poor drainage, conditions have favored the growth and accumulation of vegetable matter. In these low, flat areas little oxidation has taken place, while in the better drained areas it has reached an advanced stage.

The soil in the overflowed bottom lands of the Savannah River is made up principally of Piedmont material, while the overflowed bottoms of the other streams consist entirely of reworked Coastal Plain material. The Savannah River, which rises in the Piedmont and flows through Piedmont and Coastal Plain areas, has developed an old terrace consisting of unconsolidated sands and clays deposited when the river was flowing at a higher level than at present. This terrace consists of reworked Piedmont, Appalachian, and Coastal Plain material.

The soils of Hampton County may be classed in three distinct groups: (1) Upland soils, (2) terrace or old-alluvial soils, and (3) first-bottom soils composed of recent alluvium. The various soils are combined into series, each series including soils which have the same color, origin, and structure, and similar drainage and topographic

characteristics. The series is divided into types, on the basis of texture.

The series comprising the soils of the uplands are the Norfolk, Ruston, Plummer, Coxville, Susquehanna, Portsmouth, and Hyde. The Cahaba and Leaf series include the terrace soils, or soils derived from old alluvial deposits. The Congaree series and the undifferentiated sands and loams mapped as Swamp include the recent-alluvial soils of the first bottoms.

The Ruston series has gray to grayish-brown surface soils and reddish-yellow to yellowish-red, friable sand and sandy clay subsoils. The soils of this series occupy the highest positions in the county. They are closely related to the Norfolk but differ essentially in the color of the subsoil, which is redder, denoting better natural drainage, aeration, and oxidation. Two types are recognized—the sandy loam and fine sandy loam.

The Norfolk types are characterized by their gray to light-gray or yellowish-gray surface soils. The subsoils are yellow sands or friable sandy clays. The Norfolk soils are deficient in organic matter. They have fair to good natural drainage, representing a stage of development intermediate between the more poorly drained soils of the Coxville and the better drained soils of the Ruston series. The Norfolk series is represented in the county by eight types—the coarse sand, sand, loamy sand, fine sand, loamy fine sand, coarse sandy loam, sandy loam, and fine sandy loam.

The Coxville soils also are closely associated with the Norfolk, from which they differ in topography and drainage and in structure and color of the subsoil. The Coxville soils have light-gray to dark-gray surface soils and mottled yellow, gray, and vermilion sandy clay to silty clay subsoils. The red mottling occurring in the lower part of the 3-foot section is characteristic of this series. These soils occupy flat to depressed areas, where natural drainage is lacking or inadequate. Two types, the sandy loam and fine sandy loam, are mapped in this survey.

The surface soils of the Susquehanna series are gray to yellowish gray, with red and brown mottlings. The subsoils are yellowish gray, with red, orange, and gray mottlings, and are stiff and plastic. The surface is flat and the soils are poorly drained. The Susquehanna series as mapped in Hampton County differs slightly in topography from its typical development in other areas. In this county low hillocks and small depressions are common. Only one type, the Susquehanna clay, is mapped.

The Portsmouth series includes poorly drained soils containing a relatively large proportion of vegetable matter. The subsoil is more crumbly in structure and contains more sand than that of the

Coxville series, though it is occasionally rather plastic. The surface soils are dark gray to black, the result of organic matter, and the subsoils are light gray to drab or mottled gray and yellow. These soils have poor natural drainage, as they occupy depressions. In local areas there is found in the subsoil a cemented layer of sand, brown in color and a few inches thick. The Portsmouth sandy loam, fine sandy loam, and loam are mapped in this county.

The Hyde series is characterized by a high content of thoroughly decomposed vegetable matter, which gives the material a black color throughout the 3-foot section. The color of the subsoil distinguishes this series from the Portsmouth, which has gray to mottled gray, yellow, and brown subsoils. These series also differ slightly in origin, the Hyde consisting of material laid down in rather still water, as an old lagoon, while the Portsmouth represents depressed areas in Coastal Plain material. The Hyde soils occur in poorly drained flat or depressed areas. The silty clay is the only member of the Hyde series recognized in this county.

The Plummer series includes poorly drained types having light-gray to gray surface soils, with yellow and gray mottled subsoils. Pockets of clay, occurring throughout the lower part of the 3-foot section, are characteristic. Typically the soils of this series lie between the overflowed lands and the well-drained uplands. In this position the areas receive the seepage water from the uplands and remain in a wet condition, as they are so near the level of the streams that natural drainage is practically lacking. The Plummer fine sand is the only member of this series mapped.

The Cahaba series is characterized by brown to reddish-brown surface soils and yellowish-red to reddish-brown subsoils. These soils occupy an old-terrace position, and lie above overflow. They are the well-drained soils of the terrace group. The Cahaba series typically consists mainly of reworked Coastal Plain material, but in this county it is composed of a mixture of Coastal Plain and Piedmont material. The soils in this county are grayer than typical, and contain considerable mica. The series is represented by the sand and fine sandy loam.

The Leaf series is similar in appearance to the Coxville and Susquehanna series of the uplands. Typically the surface soil is gray and is underlain by yellow or mottled yellow and gray material, grading into a gray and red, plastic subsoil. The soils are derived from a mixture of reworked Piedmont and Coastal Plain material. The series is developed as a well-defined terrace, lying above overflow, along the Savannah River. The drainage is poor. Only one type, the fine sandy loam, is mapped in this county.

Typically, the Congaree series includes brown to reddish-brown soils, with comparatively little change in texture or color in the sub-

soil. Occasionally grayish and yellowish mottlings are encountered in poorly drained positions. The series as mapped in this county varies from the typical in that the subsoil is heavier and is mottled in places, owing to imperfect drainage conditions. This series occupies the first-bottom land along the Savannah River and is subject to overflow even by slight freshets. It is derived largely from Piedmont material, with some admixture of Coastal Plain material. The Congaree series is represented by a single type, the silt loam.

Swamp consists of undifferentiated material, occupying the first bottoms along streams which rise in the Coastal Plain. The type has a black surface soil and a gray or mottled gray and yellow subsoil. The surface is flat, and the areas are saturated or inundated throughout the year.

The following table gives the names and the relative and actual extent of the soils mapped in this county:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Norfolk fine sandy loam.....	53,440	13.6	Leaf fine sandy loam.....	15,744	4.0
Coxville fine sandy loam.....	44,480	11.3	Ruston fine sandy loam.....	11,072	
Portsmouth loam.....	34,368	8.8	Deep phase.....	2,368	3.4
Norfolk fine sand.....	32,960	8.4	Norfolk sand.....	11,200	2.9
Swamp.....	32,320	8.3	Norfolk coarse sand.....	6,836	1.6
Norfolk sandy loam.....	28,672	7.3	Norfolk loamy sand.....	5,504	1.4
Ruston sandy loam.....	18,368		Plummer fine sand.....	5,184	1.3
Rolling phase.....	2,624	5.7	Cahaba fine sandy loam.....	4,608	1.2
Deep phase.....	1,216		Portsmouth sandy loam.....	2,048	.5
Coxville sandy loam.....	21,248	5.4	Hyde silty clay.....	1,984	.5
Norfolk loamy fine sand.....	18,944	4.8	Susquehanna clay.....	1,216	3
Portsmouth fine sandy loam.....	18,368	4.7	Total.....	392,320	
Congaree silt loam.....	18,048	4.6			

NORFOLK COARSE SAND.

The Norfolk coarse sand consists of a gray to yellowish-gray coarse sand. As a rule the surface soil and subsoil are similar in texture and color. In some areas the subsoil is very light gray to whitish. Both the soil and subsoil are very open, porous, and incoherent.

Included with this type are small areas of typical Ruston coarse sand of about the same agricultural value as the Norfolk coarse sand. The principal occurrence of such material is east of King Creek School. The soil is a gray to brown coarse sand 6 to 8 inches deep, underlain by a yellowish-red to reddish-yellow coarse sand.

The Norfolk coarse sand is not very extensive in Hampton County, the largest areas occurring in the western part. A few small areas are distributed throughout the southern part of the county.

The topography is gently undulating. The type generally occupies a ridge position, where it occurs between ponds, and is found on the slopes of many of the larger streams. The open and porous structure of the material renders the drainage excessive.

The forest growth on this type consisted mainly of scrub oak, with some post oak, red oak, shortleaf pine, and longleaf pine. Practically all the type is under cultivation.

The Norfolk coarse sand is considered one of the less desirable soils of the county. Corn, cotton, and oats are grown but give very unsatisfactory yields. Corn yields 10 to 15 bushels per acre, cotton one-fourth to one-half bale, and oats 5 to 15 bushels.¹ Heavy applications of complete fertilizer and barnyard manure greatly increase these yields. This type requires the same treatment as the Norfolk sand.

NORFOLK SAND.

The Norfolk sand to a depth of about 6 inches is a gray to light-gray sand, passing into a pale-yellow sand, which extends to a depth of 3 feet or more. In most places the yellow color becomes stronger with depth, but locally the subsoil may have a whitish appearance. There is no distinct line of demarcation between the soil and subsoil. Both the soil and subsoil are porous and incoherent.

This type includes a few areas of typical Ruston sand, which are not separated, because of their small size. In the vicinity of Maulding Mill Pond and in a few small areas elsewhere the surface soil to a depth of about 6 inches is a gray to grayish-brown sand, and the subsoil to a depth of 3 feet or more a yellowish-red sand.

The Norfolk sand type is not extensive in this county. The largest areas occur in the vicinity of Hay School and near Cherry Hill School. This type occurs as ridges between areas of Portsmouth soils. In a few cases the type occupies the slopes along the streams. The topography is level to gently undulating. Typical "sand-hill" topography occurs where erosion has been active. The drainage is excessive and the water-holding capacity of the type is very low.

The natural forest growth consists mainly of scrub oak, with very little longleaf pine. The greater part of the type is under cultivation. Agriculturally it is not very important. Corn and cotton are the only crops grown to any extent. With an application of 400 pounds of 8-4-4 fertilizer per year yields of one-half to three-fourths bale of cotton or 10 to 20 bushels of corn per acre are obtained. The land is valued at \$5 to \$15 an acre.

The light color indicates that the soil is very low in organic matter. The type is not retentive of moisture and crops suffer from drought.

¹ Statements of the yields of crops and the quantities and kinds of fertilizers used on the several soils are based upon information supplied by farmers.

By applying the fertilizer at different times in the season and turning under organic matter in the form of barnyard manure or green crops this type can be made fairly productive. Better yields are obtained in moderately wet seasons than in seasons of excessive or deficient rainfall.

NORFOLK LOAMY SAND.

The Norfolk loamy sand is a gray to whitish sand to loamy sand, underlain at a depth of about 6 inches by a pale-yellow or yellowish-gray loamy sand. The subsoil from 24 inches to a depth of 3 feet or more is a pale-yellowish, light sandy loam. In a few local areas a sandy clay is encountered in the lower 6 inches of the 3-foot section.

This type is not extensively developed. It occurs mainly in the northern part of the county, the largest areas being found in the vicinity of Enon Church. Several smaller bodies are encountered in other parts of the county.

The topography of the Norfolk loamy sand is gently rolling to flat. The type generally occupies knolls and ridges. The drainage is thorough, because of the open and porous structure of both the soil and subsoil. Owing to the occurrence of heavier material in the lower part of the 3-foot section, the water-holding capacity of this type is better than that of the sand type.

Owing to its comparatively small extent, this type is not important agriculturally. The natural forest growth consists chiefly of scrub oak, post oak, longleaf pine, shortleaf pine, and some water oak. The greater part of the type has been cleared and is now under cultivation. Cotton, corn, and oats are the principal crops, named in order of their importance. Corn yields 15 to 25 bushels, oats 15 bushels, and cotton one-half to three-fourths bale per acre. As a rule, about 500 pounds per acre of an 8-4-4 fertilizer is applied to corn and cotton. Land of this type is valued at \$25 to \$40 an acre.

The Norfolk loamy sand can be improved by turning under green crops or barnyard manure. The open structure of the soil permits excessive leaching. It is advisable on this type, as well as on the other loamy and sandy types, to distribute the fertilizer at different times during the season instead of applying all of it at the time of seeding. Pecans, peanuts, melons, and early truck crops would apparently give good yields on this soil.

NORFOLK FINE SAND.

The Norfolk fine sand is a light-gray to whitish fine sand to a depth of about 6 inches, passing into a pale-yellow or yellowish-gray fine sand which continues downward to a depth of 3 feet or more. The sand content of this soil does not give the material a gritty feel, as the sand particles are not sharp. The soil and sub-

soil are both very loose and incoherent. In a few small areas in this type a fine sandy loam is encountered at a depth of about 3 feet.

This type has a large total area. It occurs principally in the southeastern part of the county, the largest area being in the vicinity of Barkersville. There are also large areas between Estill and Luray, around Shuman Store, and in the vicinity of Varnville.

The topography is level to gently rolling. The type occupies ridges and knolls and as a rule lies higher than the surrounding country. The subdrainage is good, and on the ridges it is excessive, causing the soil to be very droughty in dry seasons.

The greater part of the Norfolk fine sand has been cleared of its native growth and is under cultivation. The natural timber is principally scrub oak, longleaf pine, and shortleaf pine.

On the Norfolk fine sand cotton is the most extensively grown crop. Corn ranks next in importance, and some oats and cowpeas are produced. The yields of the general farm crops are very low. Cotton yields one-third to one-half bale per acre, corn 10 to 20 bushels, and oats 5 to 10 bushels. Cotton and corn are fertilized with 300 to 600 pounds of an 8-4-4 mixture per acre.

Land of this type sells for \$5 to \$20 an acre.

The Norfolk fine sand is better adapted to beans, cantaloupes, watermelons, and early vegetables than to the general farm crops, as these special crops are harvested before the dry weather of late summer occurs. The soil is light in texture and warms up early in the spring. Owing to the open structure of the soil and subsoil, it is difficult to build up this type and maintain its productiveness. The liberal application of manure and the plowing under of green crops are highly beneficial.

NORFOLK LOAMY FINE SAND.

The Norfolk loamy fine sand is prevailingly a light-gray loamy fine sand to fine sand, underlain at a depth of about 6 inches by a yellowish-gray or pale-yellow loamy fine sand which usually grades into a yellow, sticky fine sandy loam at about 30 to 36 inches. When dry the greater part of the type has a whitish appearance. The soil represents a grade of material intermediate in respect to texture, color, and agricultural value between the Norfolk fine sand and the fine sandy loam. In a few places a fine sandy clay is encountered at about 30 inches. These areas could properly be mapped as a deep phase of the fine sandy loam type, but they do not differ sufficiently in agricultural value from the loamy fine sand to warrant separation.

The Norfolk loamy fine sand is mapped principally in the central part of the county. It is not very extensive. The largest areas occur in the vicinity of Holly Hill School, Airsdale School, and Browning Church. Several important areas are found in the north-

ern part in the vicinity of Hickory Grove School and around Brunson.

The topography characteristically is level to gently undulating. In many places the type occurs as a ridge, and as a rule it lies higher than the surrounding country. Owing to its topographic position and open structure, the type has good natural drainage, with the exception of flat areas in which the soil remains wet during the rainy season.

This type is not very important agriculturally, because of its small extent. Practically all the natural forest growth, which consisted principally of scrub oak, shortleaf pine, and some longleaf pine, has been removed, and the land put under cultivation. Cotton is the principal crop; corn ranks next to cotton in importance; and some oats are grown. Cotton yields one-third to 1 bale per acre, corn 15 to 30 bushels, and oats 10 to 15 bushels. About 500 pounds per acre of an 8-4-4 fertilizer mixture is applied to corn and cotton. Land of the Norfolk loamy fine sand sells for \$10 to \$25 an acre.

This type responds readily to the application of fertilizer, but owing to the open structure of the subsoil it is more difficult to increase and maintain the productiveness than in the case of the fine sandy loam. The organic-matter content is very low; it can be effectively increased by applying barnyard manure or plowing under green crops. This soil is very easily tilled and does not bake. Where corn is planted 10 to 15 inches deep "firing" is very uncommon. The type is well suited to the production of early truck crops, as it warms up early in the spring. Pecans also should prove profitable.

NORFOLK COARSE SANDY LOAM.

The Norfolk coarse sandy loam is indicated on the soil map by the inclusion symbol in the Norfolk sandy loam color. The surface soil is a light-gray to gray coarse sandy loam to loamy coarse sand, passing into a yellowish-gray loamy coarse sand which extends to a depth of 15 to 25 inches. The subsoil is a yellow, rather heavy, coarse sandy clay. There usually is considerable medium sand in both the soil and subsoil.

This type is unimportant in Hampton County. It occurs in a few small areas along the Barnwell County line in the vicinity of King Creek, and in other parts of the county, usually bordering the bottom lands. The topography is flat to undulating and gently sloping. The type is well drained. On slopes the soil is slightly eroded. Owing to its open and porous structure and coarse texture, this soil absorbs practically all the water falling upon it, and its sandy clay subsoil gives it a good water-holding capacity.

The natural forest growth is longleaf pine, with some shortleaf pine and oak. With the exception of the steeper slopes, all the type is cultivated.

Corn and cotton are the only important crops grown. Corn produces 10 to 20 bushels and cotton one-fourth to three-fourths bale per acre. This soil is fertilized in the same manner as the other Norfolk types. It has about the same agricultural value as the sandy loam. Owing to the coarse texture of the soil, deep-rooted crops do better on this type than shallow-rooted crops. The incorporation of organic matter, deep plowing, and systematic crop rotation greatly increase crop yields.

NORFOLK SANDY LOAM.

The surface soil of the Norfolk sandy loam consists of a grayish-brown loamy sand, passing at 4 to 6 inches into a pale-yellow loamy sand which extends to depths of 12 to 24 inches, on the average about 15 inches. The subsoil is a yellow, friable sandy clay. In some of the better drained areas yellowish-red or light-red mottlings occur in the lower part of the 3-foot section, while in some of the poorly drained situations mottlings of light gray are frequent. In a few small areas, not sufficiently extensive to be shown satisfactorily on the soil map, there is considerable gravel on the surface.

The Norfolk sandy loam is mapped principally in the western and southwestern parts of the county. The topography is level to gently undulating. As a rule the type lies elevated above adjoining soils. Owing to the open and friable structure of the subsoil the drainage is good. In local flat areas the drainage is poor, but is easily improved by ditching or tiling. This type is retentive of moisture, and crops do not suffer for want of moisture except after very long dry seasons.

The Norfolk sandy loam is one of the most important and extensive of the well-drained soils in Hampton County. The greater part of the type is under cultivation. Small areas are forested, the native timber consisting mainly of live oak, dogwood, longleaf pine, and shortleaf pine. Where a field is allowed to lie idle sedge grass grows abundantly.

This soil is highly valued for general farming and is one of the most productive soils in the county. Cotton is the crop most extensively grown on this type, with corn next, and oats, cowpeas, watermelons, and beans grown to a smaller extent. Cotton, watermelons, and beans are produced commercially, while the other crops are mainly fed on the farm. Cotton yields one-half to $1\frac{1}{2}$ bales per acre, corn 25 to 50 bushels, oats 15 to 40 bushels, beans 50 to 75 bushels, and watermelons one-half to $1\frac{1}{2}$ carloads per acre.

The Norfolk sandy loam is easily tilled and can be kept in a good physical condition with proper handling. All the farmers on this type use commercial fertilizer. Cotton and corn receive 400 to 600 pounds of an 8-4-4 mixture per acre. Beans and melons are given heavier applications of fertilizer than are the general farm crops, the quantity ranging from 400 to 1,200 pounds of an 8-4-4 mixture per acre. The general practice for fertilizing cotton and corn is to apply 500 pounds per acre of an 8-4-4 or 9-2-3 mixture at the time of seeding, and at the time of last cultivation about 100 pounds of nitrate of soda. Oats generally receive a light application of fertilizer at the time of seeding and about 100 pounds per acre of nitrate of soda broadcasted about the middle of March. Land of the Norfolk sandy loam sells for \$20 to \$40 an acre.

It is advisable to plow this soil deep in the fall. Corn should be planted deep, so that when it is laid by the seed will be 10 to 15 inches under the surface. This method prevents "firing" and materially increases the yield. This type is responsive to fertilization and is easily built up and maintained in a highly productive state. This soil, like the other Norfolk types, is very low in organic matter, which should be supplied in the form of barnyard manure or by plowing under green manuring crops. It is adapted to the same crops as is the Norfolk fine sandy loam.

NORFOLK FINE SANDY LOAM.

The surface soil of the Norfolk fine sandy loam is a light-gray to gray fine sand or loamy fine sand, passing at 3 to 7 inches into a pale-yellow or yellowish-gray loamy fine sand which extends to a depth of 12 to 18 inches. The subsoil is a bright-yellow, friable, fine sandy clay. In many places where the drainage is rather poor there are faint mottlings of gray, and in the better drained areas faint reddish mottlings occur in the lower part of the 3-foot section. Over large areas this type varies from the typical. This variation is common where the soil has recently been cleared and, lying rather low, has imperfect drainage. The surface soil in such places is a gray loamy fine sand to a depth of 2 to 6 inches, passing into a grayish-brown layer which extends to a depth of 15 to 20 inches. The subsoil is pale yellow, with faint mottlings of gray and red.

The Norfolk fine sandy loam is the most extensive soil type and is found in nearly all parts of the county. Large areas occur in the vicinity of Crocketville, east of Estill, and bordering Mill Creek.

In general the topography is level to gently undulating. Where the type occurs along the streams and ponds it occupies a ridge position. The higher lying bodies are fairly well drained, while the flat areas require artificial drainage. The subsoil of this type is re-

tentive of moisture, and crops do not suffer from drought, except during very dry seasons.

The Norfolk fine sandy loam is one of the most important types in the county. Practically all the natural forest growth, which consisted mainly of shortleaf pine, longleaf pine, water oak, and red oak, has been removed, and the land is now under cultivation. The most important crops produced are cotton, corn, oats, cowpeas, watermelons, and beans. There is probably a third larger acreage of cotton than of corn grown on this type. Corn, oats, and cowpeas are grown for feeding on the farm; the cotton, watermelons, and beans are sold. Watermelons and beans are receiving increasing attention as cash crops. Watermelons are ready for market by June 12 to 20. Beans are harvested about May 15.

On the Norfolk fine sandy loam cotton yields one-half bale to $1\frac{1}{2}$ bales per acre, corn 15 to 40 bushels, oats 15 to 45 bushels, beans 40 to 75 bushels, and watermelons from one-third to 1 carload per acre.

The soil is mellow and is easily tilled, and is responsive to good cultivation and fertilization. All crops grown receive a liberal application of fertilizer. Cotton and corn are usually fertilized with about 500 pounds per acre of an 8-4-4 mixture at the time of seeding and at the last cultivation 100 to 500 pounds of nitrate of soda is applied. Watermelons receive an acreage application of 600 pounds of an 8-4-4 mixture at the time of seeding and 100 pounds of nitrate of soda, distributed after the last cultivation. Applying fertilizer twice during the season gives much better results than applying the same quantity at the time of seeding.

Land of the Norfolk fine sandy loam is sold for \$3 to \$50 an acre, depending mainly upon the location. Its average selling price is about \$30 an acre, including a large percentage of poorly drained soil.

The productiveness of this soil is easily improved and maintained. The light color of the surface soil indicates that the organic-matter content is low. Since very few cattle are kept on the farm, barnyard manure is scarce, and organic matter must be supplied to the soil by such means as plowing under cowpeas, rye, or some other green crop. The type can be greatly improved by growing winter cover crops. Flat breaking of the land to a depth of 10 to 15 inches is very beneficial. A systematic rotation, including cotton, oats, cowpeas, and corn, in the order named, has proved very profitable. This soil is adapted to peanuts and bright tobacco. The application of lime is necessary for the profitable production of peanuts.

RUSTON SANDY LOAM.

The soil of the Ruston sandy loam to a depth of about 6 inches is a gray to grayish-brown loamy sand, passing gradually into a red-

dish-yellow loamy sand which extends to a depth of 15 to 24 inches. The subsoil is a yellowish-red or reddish-yellow to light-red, friable sandy clay. The sand content of the subsoil decreases with depth. The subsoil when dry is crumbly. Viewed from a distance, the surface of this type has a slightly reddish tinge.

The Ruston sandy loam is one of the most extensively developed well-drained soils in the county. It occurs in rather large areas throughout the western part of the county. A few areas are scattered in other sections. One of the largest areas is in the vicinity of Solomons Crossroads School.

This type lies higher than the surrounding soils. It has a level to gently undulating topography, and often occupies slopes and ridges. Owing to its topographic position it has good natural drainage. The subsoil is retentive of moisture, but gives it up readily to the soil, and it is only during very dry weather that crops suffer from lack of moisture.

The Ruston sandy loam is one of the most important types in the county, owing to its extensive development and high agricultural value. Probably 90 per cent of the type is under cultivation. Very small areas are forested with a natural growth of longleaf pine, dogwood, and oak. All crops grown in the county are produced. The most important crops are cotton, corn, and oats. Cowpeas, watermelons, and beans are becoming more important. Cotton is the principal money crop, as it is on the other well-drained soils. By the practice of improved methods which have been introduced in the last few years corn yields have increased to such an extent that the production is greater than is required for farm use, and corn is becoming a cash crop. The oats and cowpeas produced are used on the farm. Watermelons and beans are grown with profit and are gaining in importance as cash crops. There are a few commercial pecan groves on this type.

This soil is a better drained, more thoroughly oxidized and aerated, and more productive type than the corresponding Norfolk type. It is comparable with the Ruston fine sandy loam in agricultural value. All the crops do well. Cotton yields one-half bale to 2 bales per acre; corn, 20 to 65 bushels; oats, 25 to 60 bushels; watermelons, one-half carload to 1½ carloads; and beans, 50 to 75 bushels.

Cotton and corn receive 400 to 600 pounds per acre of an 8-4-4 fertilizer, and at the time of the last cultivation an additional application of 100 to 200 pounds of nitrate of soda. Oats are given a light application of fertilizer at the time of seeding, and about the middle of March 100 to 200 pounds of nitrate of soda. Watermelons receive from 400 to 1,200 pounds per acre of an 8-4-4 or a 9-2-3 mixture.

This land is sold for \$20 to \$60 an acre, depending upon location and improvements.

Owing to its good physical condition, this soil is readily improved, and its productiveness is easily maintained by adding barnyard manure or plowing under green crops, such as cowpeas or rye. A rotation which has proved valuable on this type consists of cotton, corn, with cowpeas seeded when the corn is laid by, and oats. Where the cowpeas are plowed under instead of being removed the following crop of oats has a better color and makes a more luxuriant growth, producing 20 to 30 per cent heavier yields than where the legume has been removed. For corn the best results are obtained by plowing the field to a depth of 10 to 15 inches in the fall and thoroughly harrowing the following spring. The field is bedded high and the corn planted so deep that the grain will be 15 to 24 inches below the surface when the crop is laid by. This method prevents "firing" during dry weather and greatly increases the yield.

Ruston sandy loam, rolling phase.—The rolling phase differs from the typical Ruston sandy loam in that it occupies the high ridges and knolls, and has a broken and rolling topography. It is well drained, and all of it, with the exception of the steeper slopes, is cultivated to corn and cotton. This phase is confined to the extreme western corner of the county.

Ruston sandy loam, deep phase.—The Ruston sandy loam, deep phase, consists of a gray to brownish-gray sand to loamy sand, passing at a depth of about 6 inches into a pale-yellow or yellowish-red loamy sand, which extends to a depth of 20 to 30 inches. The subsoil is a yellowish-red or reddish-yellow sandy loam, containing sufficient clay to make it slightly coherent. A sandy clay is often encountered in the lower part of the 3-foot section. This phase is intermediate in character between the Ruston sandy loam and the Ruston sand.

The deep phase of the Ruston sandy loam occurs in small areas. As a rule it occupies ridges in areas of the Norfolk types. It occurs also along the first bottoms of streams. The surface is level to gently undulating, and drainage is good to excessive.

The same crops are grown on land of this phase as on the typical Ruston sandy loam and the crops are of the same relative importance. Peanuts, pecans, and the early vegetables do well. The yields of the general farm crops are considerably lower. Cotton yields one-half to 1 bale, corn 10 to 25 bushels, and oats 5 to 20 bushels per acre. Fertilizer is applied in about the same quantities as on the typical soil. This land is held at \$5 to \$20 an acre.

The openness of the subsoil makes it difficult to maintain the productiveness of this phase. The same methods of improvement are needed as on the typical Ruston sandy loam.

RUSTON FINE SANDY LOAM.

The surface soil of the Ruston fine sandy loam is a gray or light-brown loamy fine sand or light fine sandy loam, grading at 4 to 8 inches into a pale-yellow loamy fine sand which usually extends to a depth of 12 to 24 inches. The typical subsoil is a reddish-yellow to yellowish-red, friable fine sandy clay, which extends to a depth of 3 feet or more. Locally, the subsoil varies in color from deep yellow to light red. The lower subsoil strata contain very little fine sand, and in some areas yellow mottlings are present. The subsoil is crumbly in structure and readily penetrated by the roots of plants. The soil is loose and easily tilled.

This type is not extensively developed in Hampton County. The largest areas occur in the vicinity of Crocketville, west of Brunson, and northeast of this town along Caw Caw swamp. Smaller areas are scattered throughout the remainder of the county.

The surface is gently undulating. The type occupies a higher position than the surrounding types. It occurs in many places on slopes and ridges, where the natural surface drainage is excellent. In general, the type is well drained, but the drainage is nowhere excessive. The subsoil is better drained and more thoroughly oxidized and aerated than is that of the Norfolk fine sandy loam.

The Ruston fine sandy loam is one of the better soils of the county. Owing to its small extent, however, it is not an important soil. Practically all the type has been cleared of its natural forest growth, which consisted mainly of longleaf pine, certain varieties of oak, some maple, and cedar, and is now under cultivation. It is used principally for the production of cotton, corn, oats, and peanuts, which are named in the order of their importance. Cotton is the principal money crop. Corn and oats are used mainly on the farm, although a few farmers sell a small part of the corn. Peanuts are generally left in the ground and pastured to hogs. Cotton yields three-fourths bale to $2\frac{1}{2}$ bales, corn 30 to 60 bushels, and oats 20 to 50 bushels per acre. This type responds readily to thorough cultivation and to fertilization. Practically the same rotations are practiced on this type as on the Norfolk fine sandy loam, and crops receive similar fertilization. This land sells for \$30 to \$60 an acre.

This type is low in organic matter. Cowpeas and rye make a luxuriant growth on this soil, and by plowing either of these crops under the organic-matter content of the soil could be materially increased and crop yields made greater. This is one of the best cotton and corn soils in the county and with deep fall plowing, deep planting, and proper fertilization and cultivation much larger yields could be obtained.

Ruston fine sandy loam, deep phase.—The deep phase of the Ruston fine sandy loam to a depth of about 6 inches consists of a light-gray to gray fine sand to loamy fine sand, passing into a yellowish-gray or yellowish-red loamy fine sand which extends to a depth of 18 to 30 inches. The subsoil is a yellowish-red to reddish-yellow or light-red fine sandy loam to fine sandy clay. The soil and subsoil are friable and rather loose.

This phase is not extensive, occurring only in small areas along a few of the streams. The largest areas are those along Caw Caw and Whippy Swamps and Brier Creek. The topography is very gently undulating, the phase occupying slopes and ridges. The sub-drainage is excessive owing to the topographic position of the soil and its porous and open structure.

Practically all this soil is cleared of its native forest growth, which is the same as that on the fine sandy loam, and is under cultivation. The same crops, with the same relative importance, are grown on this phase as on the main type. Early vegetables do well and pecans are very productive. The yields obtained are in general somewhat lower than on the typical soil. Cotton yields one-half to 1 bale and corn 15 to 30 bushels per acre, with moderate fertilization. With a light application of lime, peanuts produce better yields than on the typical Ruston fine sandy loam. Land of this phase is held at \$10 to \$30 an acre.

The water-holding capacity of this soil can be greatly increased by supplying manure or plowing under green crops. Its productivity is not so easily maintained as that of the heavier types.

PLUMMER FINE SAND.

The Plummer fine sand to a depth of 4 to 6 inches is a light-gray to gray fine sand or loamy fine sand. The subsoil is a light-gray fine sand, streaked with yellow, and containing pockets of clay. In the better-drained areas the subsoil is a yellowish-gray fine sand to fine sandy loam. The type includes areas of sand which differ from the typical soil only in texture.

The Plummer fine sand is not extensive in this county. It occurs in inextensive developments along the smaller streams. The largest areas are encountered along Black and Brier Creeks.

The surface is flat and there is practically no natural surface drainage. The type adjoins the overflowed stream bottoms. It receives the seepage waters from the immediate uplands and is wet and soggy throughout the year. This entire type supports a natural growth of shortleaf and longleaf pine, with some gum and water oak and a heavy undergrowth of gallberry and huckleberry bushes. This land is held at \$2 to \$10 an acre.

The Plummer fine sand has practically no agricultural value, as it can not be drained except by lowering the stream channels, and the soil probably is not sufficiently productive to warrant the expense of draining.

COXVILLE SANDY LOAM.

The Coxville sandy loam to a depth of about 6 inches consists of a gray to dark-gray loamy sand to light sandy loam. This passes into a light-yellow to gray and yellow light sandy loam, which extends to a depth of 12 to 24 inches. The subsoil, which is encountered at an average depth of about 15 inches, is a mottled yellow, gray, and bright red, heavy, plastic clay to sandy clay. In the large flat areas most of the red mottlings occur within the lower 6 inches of the 3-foot section. Where the type occurs as depressions in the Ruston and Norfolk types the subsoil is very compact and impervious and is streaked with bright red. Occasionally a true hardpan layer is encountered.

This soil is most extensively developed in the southwestern part of the county, the largest area occurring between Scotia and Garnett. There are many small areas in other parts of the county. The surface is prevailingly flat, although this type has a slightly higher elevation than the typical Portsmouth soils, drainage is poor, owing to the level topography and the impervious subsoil, and the soil is wet throughout the greater part of the year.

Practically all this type is covered with a natural growth, consisting principally of shortleaf and longleaf pine and sweet and black gum, with a heavy undergrowth of gallberry bushes and sedge grass. The type is used mainly for pastures. This land is held at \$5 to \$15 an acre.

The Coxville sandy loam has about the same agricultural value as the fine sandy loam of the series. With thorough drainage, a heavy application of lime, and deep plowing this soil will produce fair yields of the general farm crops. The wet condition of the soil prevents it from warming up soon enough in the spring for the growing of early vegetables. In well-drained areas cucumbers do well.

COXVILLE FINE SANDY LOAM.

The surface soil of the Coxville fine sandy loam consists of a dark-gray or gray light fine sandy loam, which usually grades into a pale-yellow or mottled yellow and gray fine sandy loam at about 6 inches. The typical subsoil is encountered at 12 to 20 inches and consists of a mottled yellow and gray sticky, fine sandy clay, becoming heavier with depth, and showing mottlings of light red in the lower part of the 3-foot section. Locally in depressions and occasionally in flat areas the subsoil is a heavy, plastic fine sandy clay or clay of mottled

gray and yellow color, streaked or mottled with vermillion. South of Fechtig a layer of grayish-brown fine sandy loam is encountered between 6 and 20 inches.

This type is most extensively developed in the eastern part of the county, the largest areas being west of Horsegall, around Almeda, Early Branch, Antioch Church, and Cummings. There are many small areas throughout the Norfolk and Ruston types in other sections.

The topography of this type is prevailingly flat and almost level. It occupies an intermediate position between the depressions occupied by the Portsmouth soils and the higher areas of the Norfolk types. The drainage is very poor, owing to the level topography and the plasticity of the subsoil. The type remains in a wet, soggy condition and during the wet season it is inundated.

Where the Coxville fine sandy loam is not drained it furnishes fair pasturage the greater part of the year. Only a very small part of the type is under cultivation, most of it being covered with a natural forest growth of sweet gum, shortleaf pine, and water oak, with an undergrowth of bay and gallberry bushes. Where the type is well drained, limed, and fertilized, corn yields 15 to 35 bushels, oats 20 to 40 bushels, and cotton one-fourth to three-fourths bale per acre. Rye also produces good yields.

This land is held at \$3 to \$20 an acre, with an average price of about \$8 an acre.

To reclaim this soil it is necessary to establish an efficient drainage system, either by constructing ditches or laying tile. To drain the large flats is rather expensive, as there is very little slope. In the vicinity of Conway, S. C., and Chadbourne, N. C., the Coxville soils are used successfully for the production of strawberries. For best results with the general farm crops the soil should be plowed deeply, preferably in the fall, well harrowed, and limed.

SUSQUEHANNA CLAY.

The Susquehanna clay consists of a gray to yellowish-gray clay, showing faint mottlings of brown, underlain at a depth of 8 to 10 inches by a drab to buff-colored, heavy, sticky, plastic clay, with red, gray, and orange mottling. The soil on the mounds contains considerable fine sand, while that in the depressions is a heavy, plastic, sticky clay throughout the 3-foot section. The organic-matter content of the soil in the depressions is higher than that of the soil on the mounds and ridges.

Typical areas of this type occur in the southeastern part of the county between the Big Salkehatchie and Coosawhatchie Rivers. In general, the topography is characteristically level. The surface is somewhat irregular, owing to small depressions and low hillocks,

which give the type a hummocky appearance. Such a surface is locally known in Texas and Mississippi as "hog wallowy." Natural drainage is poor, owing to the level topography and the impervious nature of the subsoil. The depressions contain considerable water during the wet season and the soil here remains in a wet and very sticky condition throughout the year. This type lies slightly elevated above the Hyde soil, which occupies the lowest position of the upland soils. The entire area of the Susquehanna clay is covered with a native growth of shortleaf pine, holly, scrub oak, post oak, sweet gum, and redbud.

This type is valued mainly for its timber, and is held for \$3 to \$8 an acre.

It is not considered advisable to clear this land for agricultural use, as it is better adapted to grazing than to the production of cultivated crops. It is probable, however, that with sufficient drainage, liming, deep plowing, and the incorporation of organic matter, fair yields of the general farm crops would be obtained.

PORTSMOUTH SANDY LOAM.

The surface soil of the Portsmouth sandy loam consists of 6 to 8 inches of dark-gray to black loamy sand or light sandy loam, passing into a dark-gray to light-gray loamy sand, which extends to a depth of about 18 inches. The subsoil is a gray to drab clay to sandy clay, with some yellow mottling in the lower part of the 3-foot section. The dark color of the surface soil is due to the decay of accumulated vegetable matter. The subsoil is rather compact, but is more friable and contains more sand than that of the corresponding Coxville type.

This type is not extensive. It is mapped principally in two areas, one at Miley and the other northwest of Garnett. A few small areas occur elsewhere in the county.

The topography of the Portsmouth sandy loam is prevailingly flat and level. The type occupies a position several feet lower than the surrounding Norfolk soils. It usually occurs in depressions within areas of the Coxville soils. The soil is wet during the greater part of the year. The level topography prevents surface drainage, and, owing to the nearness of the water table to the surface, internal drainage is poor.

The entire type is forested with longleaf pine, gum, and water oak. In local areas the tree growth is very sparse. There is a heavy undergrowth of gallberry bushes. This land is held at \$2 to \$5 an acre.

Indications are that if this type were properly drained, heavily limed, and deeply plowed it would be a good corn, oats, and potato soil. In its present undrained condition it has no agricultural value other than for pasture.

PORTSMOUTH FINE SANDY LOAM.

The surface soil of the Portsmouth fine sandy loam consists of a dark-gray to black fine sandy loam to loamy fine sand extending to depths of 6 to 12 inches. Frequently a subsurface layer of light-gray loamy fine sand, a few inches in thickness, overlies the subsoil proper. The subsoil typically is a mottled light-gray and yellow, sticky fine sandy clay. In places it is steel gray in color, faintly mottled with brownish yellow or streaked with iron stains. Bordering the sandy members of the Norfolk series the subsoil is a steel-gray loamy fine sand or fine sandy loam. The dark color of the surface soil is due to the accumulation of organic matter.

This type is not extensive, although along the small streams in the eastern part of the county there are some rather large areas. It occurs also in small, flat areas which lie somewhat lower than the Coxville soils. The topography is uniformly level and flat. The type has practically no natural drainage, and drainage by artificial means is necessary in order to make it suitable for agriculture.

This type is not cultivated; it supports a growth of shortleaf and longleaf pine, with some cypress and water oak. This land sells for \$2 to \$8 an acre.

With proper drainage and liming this type apparently can be used successfully for growing corn, oats, cotton, and Irish potatoes.

PORTSMOUTH LOAM.

The surface soil of the Portsmouth loam is a black loam to silty loam, ranging in depth from 8 to 15 inches. The subsoil is predominantly a drab, heavy, plastic silty clay, faintly mottled with brown or yellow. In some places the subsoil is a mottled gray and yellow, plastic clay, carrying a relatively high percentage of very fine sand. Occasionally a layer of white sand is encountered in the lower part of the 3-foot section. The dark color of the surface soil is due to the presence of large quantities of well-decomposed vegetable matter, and in local areas the surface soil to a depth of a few inches consists of muck, containing only a very small quantity of fine sand.

This is one of the most extensive types in the county, and it is widely distributed. The largest areas are encountered in the northwestern part of the county. The developments vary from small depressions covering a fraction of an acre to areas comprising as much as 2,000 acres.

This soil as a rule occupies depressed areas in developments of the Coxville and Norfolk types. Many small streams head the Portsmouth areas. The topography is typically level and flat, and drainage is very poor. The type is inundated except in periods of very dry weather or where artificially drained.

The Portsmouth loam is not cultivated, except in small patches 1 acre to 10 acres in extent within areas of the Norfolk types. Where cleared and properly drained, good yields of corn, cotton, and oats are obtained without fertilizers. The greater part of the type supports a forest growth consisting mainly of cypress, with some gum and shortleaf pine in the better drained areas. This land sells for \$2 to \$5 an acre in its present condition.

It is necessary, in order to use this type for agriculture, to establish artificial drainage. As the soil is very acid, it is necessary also to apply lime at the rate of 1,000 to 2,000 pounds per acre. Where a good clay subsoil is present the land, when properly drained and limed, should prove a desirable soil, especially for potatoes, corn, oats, and cotton.

HYDE SILTY CLAY.

The Hyde silty clay to a depth of about 20 inches is a black, heavy, sticky silty clay, carrying a high percentage of finely divided vegetable matter. The subsoil to depths ranging from 20 to 36 inches or more is a heavy, impervious silty clay, having a slightly bluish or greenish tinge. Faint mottlings of red, gray, and brown occur in the lower part of the 3-foot section. The soil is very sticky when wet and cracks upon drying.

The Hyde silty clay represents the accumulation of sediments in an old lagoon. The type is encountered in a single area in the southeastern part of the county, near Buckfield Lodge. The topography is prevailingly flat and level, the type occupying a position several feet below the better drained soils. Natural drainage is prevented by the imperviousness of the subsoil and the level topography.

At one time all the Hyde silty clay was planted to rice, which yielded 30 to 75 bushels per acre. At present it is not under cultivation. It supports a dense growth of marsh grass. This soil sells for \$5 to \$10 an acre.

The Hyde soils in North Carolina are well suited to the growing of corn, and are used largely for that purpose. By ditching or tiling, deep plowing, and the use of large quantities of lime this type could be made a good soil for corn, cowpeas, soy beans, and oats. Where proper methods of reclamation have been used in other areas yields of 20 to 50 bushels of corn and 30 bushels of oats per acre are obtained. Soy beans also give good returns. In North Carolina the land frequently is seeded with 4 quarts of sorghum and 1 bushel of cowpeas. In the area in this county the soil is so water-logged and compact that legumes would not give good results, except where the soil is sufficiently drained and aerated by deep plowing and liming.

CAHABA SAND.

The Cahaba sand is indicated on the soil map by inclusion symbols in areas shown in the Cahaba fine sandy loam color. The soil to a depth of about 10 inches is a dark-brown to yellowish-brown, loose and incoherent, micaceous sand. The subsoil is a yellowish-brown incoherent sand. This type is very low in organic matter.

The Cahaba sand is not extensive in this county. It occurs in a few small areas on the terraces along the Savannah River. There is a rather large area near Stokes Bluff, extending along the river into Jasper County. The type occupies knolls and ridges, and the topography is gently undulating to rolling. Drainage is excessive.

Practically all this type has been cleared of its natural vegetation, which consisted principally of scrub oak, with some longleaf pine and a large number of cactus plants, and is now under cultivation. In seasons of good rainfall fair yields of cotton and corn are obtained, but the soil is better adapted to watermelons and early truck crops. The soil and subsoil are so open and porous that fertilizers rapidly leach out, and it is difficult to maintain the productiveness of the areas under cultivation.

Land of the Cahaba sand type is priced at \$2 to \$5 an acre.

It is probable that plowing under green manuring crops is the best means of building up this type.

CAHABA FINE SANDY LOAM.

The surface soil of the Cahaba fine sandy loam ranges in color from gray to reddish brown. It consists of a loamy fine sand and has an average depth of about 10 inches. The subsoil is a red to yellowish-red fine sandy clay, which is rather compact, but is micaceous and friable. Poorly drained areas have a red and yellow mottled subsoil, which is stickier than the subsoil of the well-drained areas. The soil is known locally as "mulatto" land.

The Cahaba fine sandy loam is not very extensive, occurring as detached areas on the terrace along the Savannah River and adjoining the stream. Its most extensive development is south of Ruddell. The topography is level to very gently undulating. The type occupies well-drained positions on the terrace and in places occurs as a ridge.

Practically all the type is under cultivation; a few small areas are forested with shortleaf pine, longleaf pine, poplar, black gum, and sweet gum.

Corn, cotton, and oats are grown on this type. Corn yields 30 to 50 bushels per acre, cotton one-half bale to 1½ bales, and oats 20 to 40 bushels. These yields are obtained with applications of 300 to

500 pounds per acre of 8-4-4 fertilizer. Land of the Cahaba fine sandy loam is held at \$8 to \$15 an acre.

This soil has a compact structure, and for the best results it should be disked thoroughly before plowing, plowed 10 to 12 inches deep, and thoroughly disked and harrowed after plowing. It is deficient in organic matter, which should be supplied by adding barnyard manure or occasionally plowing under a green crop, such as cowpeas or rye. Lime also is needed, both to correct the acidity and to improve the physical condition of the soil. With proper tillage and cultivation this type should prove to be one of the strongest soils in the county.

LEAF FINE SANDY LOAM.

The Leaf fine sandy loam to a depth of about 6 inches consists of a light-gray to gray fine sandy loam, underlain by a yellow to mottled yellow, gray, and red, heavy fine sandy clay to clay. The soil and subsoil are compact, sticky, and impervious. Locally there are treeless areas in which the soil is a gray to drab silty clay to clay, and the subsoil is a mottled pale-yellow and gray, heavy, plastic, sticky clay. The subsoil as a rule contains considerable very fine sand.

This type occurs along the Savannah River, occupying a belt ranging from very narrow to 4 miles in width. It lies above normal overflow. The topography is uniformly flat and level, and surface drainage is undeveloped. Owing to the compactness of the subsoil, internal drainage is poor.

Practically all this type is forested with a native growth of longleaf pine, shortleaf pine, and sweet gum, with some oak. The small treeless areas support a growth of marsh grass.

This soil is unimportant agriculturally. A small part of it is under cultivation, mainly to cotton, corn, and oats, and the yields are low. In its present compact condition the soil requires heavy draft for plowing. It remains cold late in the spring and does not respond readily to fertilizers because of its excessive water content. The land is held at \$5 to \$10 an acre.

By the establishment of efficient drainage, the incorporation of organic matter in the form of manure or green manuring crops, liming, and plowing deep in the fall, it is probable that fair yields of corn and oats can be obtained on this soil.

CONGAREE SILT LOAM.

The Congaree silt loam to a depth of 6 to 12 inches consists of a brown to reddish-brown silt loam. This is underlain by a mottled drab, yellow, and red, heavy, sticky, plastic clay to silty clay. The mottling in the subsoil is due principally to poor drainage, and the brown color of the surface soil to the fresh deposits of silt and clay.

containing considerable vegetable matter. The type as mapped resembles the soil of the Georgetown series, the types of which are subject to tidal overflow. A part of it is composed of material which is intermediate between the Georgetown and Congaree soils.

The Congaree silt loam has a rather large total area. It occupies the first bottoms along the Savannah River and is subject to overflow by even slight freshets. The topography is level, with a few hummocks or low ridges. The type is very poorly drained and is inundated the greater part of the year. In order to farm this type diking is necessary. It supports a thick growth of sweet gum, shortleaf pine, holly, and ironwood, and is valued only for its timber. If drained and reclaimed by diking and ditching, it would produce good yields of corn.

SWAMP.

The soil of the areas mapped as Swamp is so variable in texture and structure that it can not be classed as a distinct soil type. It is composed mainly of Johnson material, and ranges from loam to sand in texture, the loam slightly predominating. The surface soil is black, with a gray to mottled gray and yellow subsoil.

Swamp occurs in the first bottoms along streams which rise in the Coastal Plain. The soil is saturated, some areas being inundated throughout the year.

The Swamp areas are covered with a natural growth consisting mainly of cypress, gum, and maple, with a few gallberry bushes, and palmettoes and other water-loving plants. The land is valued only for the timber.

It is probable that if drainage were established by straightening and deepening the stream channels, the areas of Swamp would produce fair yields of corn, cotton, and oats.

DRAINAGE.

One of the most important problems confronting the farmers of the low, flat lands of the Atlantic Coastal Plain, including Hampton County, is that of drainage. The establishment of artificial means for disposing of the excess surface water is essential to the agricultural development of extensive wet areas.

The poorly drained areas of Hampton County are (1) the wide overflowed stream bottoms; (2) the cypress ponds, which have no natural outlet and contain water the greater part of the year; and (3) the extensive areas of flat, wet land in the southern part of the county.

The main drainage ways of the county are the Savannah River, the Coosawhatchie River, Big Salkehatchie River, Whippy Swamp, Cypress Creek, Black Creek, and Boggy Swamp. These streams have overflowed first bottoms ranging from about one-fourth mile

to 2 miles in width. The bottoms are covered with water for at least 4 months of the year, and frequently they remain inundated throughout the year. All the overflowed bottoms are densely forested with shortleaf pine, sweet gum, poplar, ironwood, holly, water oak, and black gum; and although these alluvial soils are richer in organic matter than any other soils in the county, they are unsuited to agriculture in their present undrained condition. In order to make these lands suitable for farming it will be necessary to clear the bottoms of the forest growth and dredge, deepen, and straighten the channels of the main streams.

The county includes many ponds or basinlike depressions, covering in the aggregate a large area. A number of the ponds are drained by artificial ditches, but, owing to the generally level topography of the county, many of them have no natural outlet and as a result are covered with water throughout the year. There are a large number of undrained ponds in the vicinity of Crocketville, locally called "Pond Town," north of Furman, near Luray, and west of Gifford.

The third class of low, poorly drained soils includes the broad areas of flat land in the southern part of the county, having no perceptible drainage. These flats are found especially in the neighborhood of Yemassee, near Early Branch, at Fechtig, and Camp Branch, and north of Garnett. During rainy weather they are covered with 2 to 6 inches of water, remaining in this condition for weeks at a time. Only a very small percentage of this land is farmed, as it is difficult to till and, in its present condition, is not very productive. Nearly all the soils found in these flats are shown to be acid by the litmus-paper test, and heavy applications of lime are necessary before reasonably fair crops can be expected.

In order that the trucking industry may be made important in the agriculture of Hampton County it will be necessary to drain soils to be used for such purpose. There are thousands of acres in the county yielding no revenue which apparently have the natural qualities of good general-farming or trucking land if relieved of excess water. In addition to the financial advantages of increased crop production resulting from drainage, reclamation would render conditions more healthful.

SUMMARY.

Hampton County is one of the southwestern border counties of South Carolina. It has an area of 613 square miles, or 392,320 acres. The county lies wholly within the Coastal Plain region, and its topography ranges from flat to gently rolling and rolling. The elevation averages about 100 feet above sea level. The general slope is southeastward. Regional drainage is not well developed. The greater part of the county is drained by the Coosawhatchie River,

the remainder by the Big Salkehatchie and Savannah Rivers. A large total area is in need of artificial drainage.

The population of Hampton County is classed entirely as rural, and averages 26.2 persons to the square mile. Almost two-thirds of the population is colored. Hampton is the county seat, with a population of about 750. Estill is a prominent business center.

The county is well supplied with transportation facilities. The public roads are in poor condition. There are a large number of churches in the county and on an average one public school to each 12 square miles of area. The greater part of the county is supplied with the rural delivery of mail.

The winters are mild and the summers long and warm. The mean annual temperature is reported as 64.6° F. There is an average growing season of nearly eight months. The mean annual precipitation is about 49 inches, the rainfall being heaviest during the months of June, July, and August.

A large part of the land in the county is well suited to agriculture. General farming, with some trucking, is carried on. The agriculture consists of the production of cotton as the principal cash crop, with other general farm crops, mainly corn and considerable oats, for home use. The trucking industry is becoming important. A small number of cattle and hogs are raised.

The methods of farming are those common to the cotton-growing sections. The farm work stock consists mainly of mules. Very little attention is given to crop rotation. Commercial fertilizers are used in increasing quantities. Farm labor generally is scarce.

About one-half the farms are operated by the owners. There are a number of large estates in the county. The average size of the farms is reported in the 1910 census as about 121 acres. On an average 48 acres per farm is improved land.

The average assessed value of farm land is given at \$9.85 an acre. The better land is held at \$25 to \$60 an acre. There is a large total area of undeveloped land in the county.

This county includes three distinct groups of soils: Upland or sedimentary soils, terrace or old-alluvial soils, and first-bottom or recent-alluvial soils. The soils are separated into 23 types, including Swamp, and represent 10 series. They range in texture from coarse sand to clay.

The well-drained soils, with the exception of the deep sands, are very productive. Most of the soils respond very readily to fertilization. They are generally in need of organic matter and lime. The flat areas are practically worthless for farming in their present undrained condition.



[PUBLIC RESOLUTION—No. 9.]

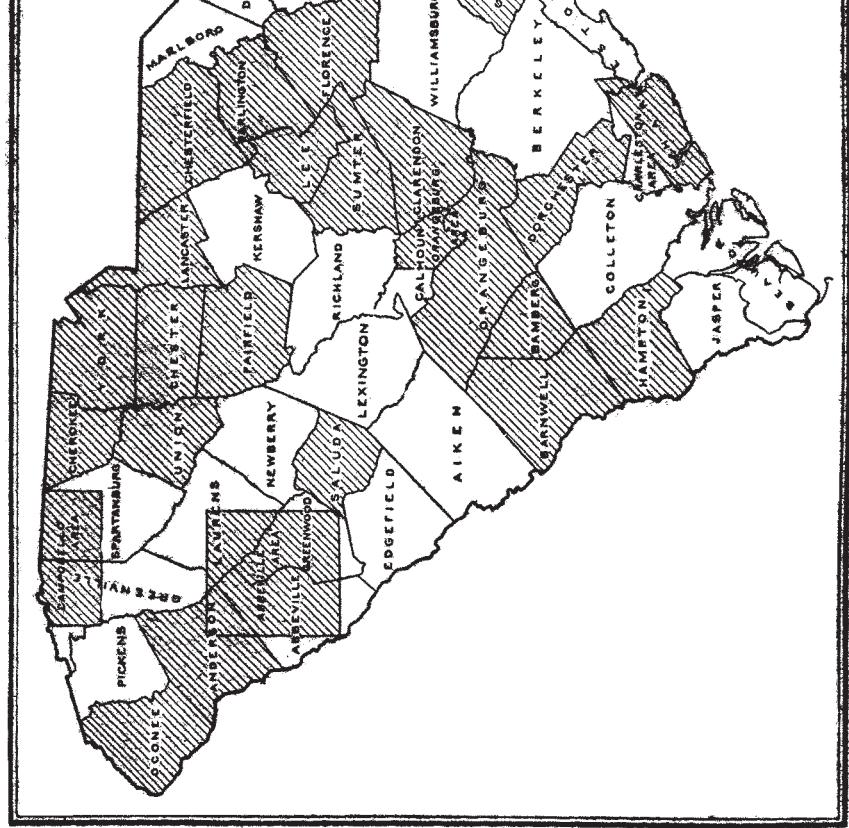
JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, be amended by striking out all after the resolving clause and inserting in lieu thereof the following:

That there shall be printed ten thousand five hundred copies of the report on field operations of the Division of Soils, Department of Agriculture, of which one thousand five hundred copies shall be for the use of the Senate, three thousand copies for the use of the House of Representatives, and six thousand copies for the use of the Department of Agriculture: *Provided*, That in addition to the number of copies above provided for there shall be printed, as soon as the manuscript can be prepared, with the necessary maps and illustrations to accompany it, a report on each area surveyed, in the form of advance sheets, bound in paper covers, of which five hundred copies shall be for the use of each Senator from the State, two thousand copies for the use of each Representative for the congressional district or districts in which the survey is made, and one thousand copies for the use of the Department of Agriculture.

Approved, March 14, 1904.

[On July 1, 1901, the Division of Soils was reorganized as the Bureau of Soils.]



Areas surveyed in South Carolina.

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